

Early Views on Monetary Policy: The Neapolitan Debate on the Theory of Exchange

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As *the* monetary question in sixteenth- and seventeenth-century Europe, specie outflow dominated the most famous monetary debate prior to the bullionist controversy of the nineteenth century: the foreign exchange controversy that took place in early-seventeenth-century England between Thomas Mun, Edward Misselden, Gerard de Malynes, and all the so-called early mercantilists. This controversy “represents the first time in English history that a war of economic tracts exerted a traceable influence on government policy” (Blaug 1991, xi).

The disappearance of silver coins from circulation, however, was not unusual. Whether short-term or of a more structural character, the causes included balance of payments deficits, coinage reforms, and arbitrage between gold and silver, among others. Given that silver coins were the means of payments mostly used in internal trade (gold coins were too valuable for that purpose), a monetary drain had an immediate impact on spending and demand, drawing the attention of everyone—pamphleteers, merchants, royal advisers—concerned with national prosperity.

The foreign exchange controversy has been widely discussed in the

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literature and figures prominently in all the major histories of economic thought.¹ However, little is known about similar events in other European countries. This oversight is unfortunate, because a broader perspective would reveal that the controversy was less dependent on particular circumstances and the interests of pressure groups and more rooted in the problems originating from a metallic money supply and from the rise of organized foreign exchange markets.² This literature is topical insofar as monetary theory, as John Hicks says, “belongs to monetary history in a way that economic theory does not always belong to economic history” (1967, 156).

The aim of this article is to reconstruct the debate on the disappearance of silver coins from circulation early in the seventeenth century in the Kingdom of Naples. The debate involved many authors, including some from beyond the kingdom.³ For the purposes of this article, however, I focus on two authors who well represent the opposing positions: Antonio Serra and Marc’Antonio De Santis.

Though little known, Antonio Serra (*fl.* 1613) is highly praised by those familiar with his work.⁴ Ferdinando Galiani, in his treatise *Della moneta*, calls Serra “the first and oldest writer in the science of political economy” ([1751] 1963, 340). Joseph Schumpeter (1954, 354) praises the quality of his real sector analysis. On very scant grounds and with some national pride, Italian scholars have credited Serra with the first formulation of the theory of diminishing returns in agriculture and of the concept of the velocity of circulation of money, as well as with the more certain accomplishment of the first correct listing of the components of the balance of payments (Benini 1892, 232; Arias 1923, 132; see also Groenewegen 1987).

Serra owes his reputation mainly to his remarkable analysis of the factors stimulating development in a country. He recognized the importance of social and political elements, especially the role of government in removing obstacles to growth, and pointed out the need to promote a

1. For a recent and interesting reconstruction of the controversy, see Steiner 1992.

2. For references to the interpretation of the pamphlets of the controversy as outgrowths of specific economic events, see Muchmore 1969.

3. For the historical background and review of the main positions, see Chiappini 1985.

4. The little we know of Antonio Serra boils down to two misfortunes: his confinement in the prison of Vicaria in Naples on 10 July 1613, as recorded in the proem to the only written work to have survived, and his firsthand experience of the beginning of the inexorable decline

national industry to accompany the production of raw materials. Yet his only surviving work, *Breve trattato*,⁵ published in 1613, was not intended to deal with development problems but was conceived to explain the deplorable state of currency circulation in Naples. For some years, gold and silver coins had either disappeared or been clipped and considerably lightened of their metal contents. Although Serra's analysis of how to promote economic growth is interesting, I focus on his contribution to the debate on the causes of gold and silver flows.⁶

Breve trattato was written in answer to a 1605 treatise published by Marc' Antonio De Santis.⁷ Unlike Serra, De Santis enjoyed success and respect in his lifetime, and his policy recommendations were followed—unfortunately, as we will see—by the viceroy. In spite of the differences in merit—Serra made a real contribution to development theory while there is nothing worth remembering in De Santis's work—both authors misunderstood the relations between balance of payments and exchange rate, between microeconomic behavior and its macroeconomic effects. These shortcomings will be pointed out, not to underline the deficiencies of economists working four centuries ago but rather to shed light on the difficulties European economic science all over Europe has come up against in tracing out links between phenomena—such as money supply and conditions of trade—that at first sight appeared to have no reciprocal relations.

of southern Italy between the late sixteenth and early seventeenth centuries. For the existing biographical material see Roncaglia 1994.

5. The complete title is *Breve trattato delle cause che possono far abbondare li regni d'oro e d'argento dove non sono miniere con applicazione al Regno di Napoli*, published by Scoriggio in Naples in 1613. All references to the original work in Italian are from the volume edited by Augusto Graziani (Serra [1613] 1913). The treatise is in three parts, with an introduction. Chapters 1–6 of part 1, chapter 1 of part 2, and chapters 2–3 of part 3 have been translated into English and appear as “A brief Treatise on the Causes which can make Gold and Silver plentiful in Kingdoms where there are no Mines” in *Early Economic Thought: Selections from Economic Literature prior to Adam Smith*, edited by Arthur E. Monroe (Serra 1924). Monroe's translation has been used whenever available, and both references, to the Italian and to the English edition, are given. Otherwise, the translation is mine.

6. For a detailed exposition of Serra's views on this subject, see Sumberg 1991.

7. *Discorso di Marc'antonio De Santis intorno all'effetto che fa in regni il cambio* was published in Naples by Costantino Vitale. It was reprinted in Colapietra 1973. Unfortunately, this edition is rife with misprints and gross misinterpretations of seventeenth-century typography. The references are to this edition. The translation is mine. In 1605 De Santis published a second pamphlet (1605b) to answer some criticisms raised against the first.

1. Exchange Rate Determination

To account for the state of affairs at the beginning of the seventeenth century, when the Kingdom of Naples was “effectively deprived of coins, and might be said to be left with virtually none” (De Santis 1605a, 128), commentators formulated various theories on causal relations between flows of precious metals, exchange rates, and balance of payments. There were two contrasting approaches. The first, adopted by De Santis, held that the disappearance of coins was the result of exclusively monetary causes. In other words, it was the conditions of circulation—the quantity and quality of coins and the speculation of precious metal merchants—that caused the outflow of gold and silver from the kingdom. Neither the productive structure of southern Italy nor the place it occupied in world trade is considered in this explanation.

In contrast, Serra believed the causes were real, and only real. Gold and silver, as international currency, flowed away from the country to make up the trade balance deficit, which was aggravated by the need to pay interest abroad on the huge public debt and the profits on foreign capital invested in the kingdom.

At the heart of the debate lay the exchange rate. Before examining this debate, I briefly consider how international payments and exchanges among various currencies were actually carried out. My aim is twofold. First, I wish to clarify a terminology that, rooted as it was in commercial practices of the time, sounds particularly obscure. Second, I wish to examine the room for maneuver open to the public authorities to influence trends in the exchange rate and conditions for circulation in a monetary regime based on metallic circulation. We may thus obtain a clearer idea of the meaning of the various proposed measures.

The rate of exchange between the currencies of two countries in the early seventeenth century could be defined on the basis of three criteria:

1. the market price of bills of exchange;
2. the ratio between the quotations of the currencies circulating in the two countries, which we may define as “legal parity”;
3. the ratio between the “intrinsic values,” that is, between the actual pure metal contents of the respective units of account, which we may define as “real” or “commercial” parity.⁸

8. For an illustration of the definitions current in the sixteenth and seventeenth centuries, see De Roover 1949, 94–96.

Let us now take the three criteria one by one, with the following premises. One, reference to currencies will always be to gold and silver coins, that is, the money of the greatest value used for large-scale transactions in wholesale trade and international payments, and never to small coins, the manufacturing costs of which often exceeded the actual metal value, and whose precious metal contents, where present at all, were negligible. The coins used in retail trade were in fact token money.

Two, the exchange rate is defined in terms of domestic currency units per unit of foreign currency, so that devaluation takes the form of a rise in the exchange rate. Thus we assume that the foreign currency is the fixed term of comparison and the domestic currency the variable. This was the custom between the Kingdom of Naples and most of the countries for which quotations existed.⁹

2. Bills of Exchange

By the early seventeenth century the bill of exchange had become the principal means for payment in international trade. Conceived with the aim of avoiding the risks and costs of transporting precious metals, bills of exchange had become the object of specific economic activity in the hands of a network of bankers-merchants, first Florentine, then mainly Genoese.

A bill of exchange was a payment order involving two traders, A and B, in one country, say the Kingdom of Naples, and their respective correspondents A' and B' abroad. A, the borrower, "takes up money by exchange" (*piglia in cambio*), that is, he sells a bill to B for ready cash (or in return for securities convertible in cash on demand).¹⁰ B, the lender, is the "deliverer" (*dà in cambio*). A writes an order to his foreign correspondent A', instructing him to pay an agreed sum to B', the foreign correspondent of B. B sends the letter to B', who presents it to A' for payment, which will be performed either at a fixed date (e.g., "the next fair of Besanzone"), or *at usance*, that is, after a conventional lapse of time (generally thirty days).¹¹ At the end of the operation, when A' has paid B',

9. An exception is Sicily. On the use of quotations in the Kingdom of Naples, see De Rosa 1955, 14.

10. In Naples much use was made of the *fedi di credito* (certificates of credit) issued by the public banks, which could be exchanged for metallic money on demand. See De Rosa 1955, 3.

11. For reasons of security the bills of exchange were always drawn up in more than one copy and sent separately.

A has received cash but has a debt in foreign currency with his correspondent A'. B sees a reduction in his home assets in cash but an increase in his foreign assets in the form of credit with his correspondent B'.

The exchange rate, or “price of exchange,” was the number of units of account in the domestic currency that B paid out to A for each foreign unit of account that A has committed A' to paying. On the level of this “market” exchange rate, three factors were at work: (1) the level of “legal parity”; (2) the market price of the gold and silver coins; and (3) supply and demand conditions in the exchange market.

With regard to the third point, it must be remembered that the bill of exchange was the most widely used tool in Christian Europe’s international traffic. In fact, payment in gold or silver, coined or bullion, was reserved for trade with the more distant countries, for example, those in the Far East. The existence of organized markets, where a bill of exchange found ready purchase, and the perfect clearing houses offered by the fairs, like that of Besanzone, made it possible for bills of exchange amounting to millions of *écu* to circulate without a single coin passing hands.¹² The exceptional case that called for explanation, therefore—at least among the countries not producing precious metals—was not why international payments were made with bills of exchange, but what circumstances led to the transfer of metallic money.

Indeed, the independence from metallic circulation enjoyed by the exchange market is attested by how quotations were fixed. The foreign currency indicated in the bills of exchange was never anything more than money of account to which no currency in circulation in the major markets any longer corresponded, or had ever corresponded. It was what was described as *cambio aereo* (literally, aerial exchange).¹³ For example, the Florentine “golden *écu* in gold” was, despite its name, no more than money of account. The *écu* in use at the fair of Besanzone was a unit of account that made reference to the “gold *écu* of the five mints” (actually there were ten), that is, gold coins produced by various mints and of slightly different weights (Boyer-Xambeu, Deleplace, and Gillard 1986, 167–68).

12. According to the authors of the manuals of the period, bills of exchange amounting to 16 million *écu* were in circulation in 1624. See De Roover 1953, 76.

13. For a discussion as to whether the *scudo* of Piacenza appearing in the bills of exchange was “aerial” or real, see Serra [1613] 1913, 192–93; De Santis 1605a, 114.

Only in the minor markets was there correspondence between the actual money and the money of account, as in the case of the Neapolitan currency unit, *carlino*. For the rest, “all payments were a conversion into currency from prices formulated in a money of account” (Braudel 1967, 378).

Supply and demand determined the market exchange rate. The foreign exchange market was highly organized, with precise rules and specialized operators familiar with market conditions who could rely on an efficient network of agents and correspondents to gather and spread information. For example, in Mediterranean Europe the crucial moment during the fair of Besanzone, which was held every three months in Piacenza under the control of the Senate of Genoa, was the determination of the *conto*, or “account”—in other words, the list of quotations of the Piacenzan *écu* on major markets. This list was immediately circulated to serve as a basis for exchange-rate negotiations throughout Europe in the following months. Only somewhere between thirty and sixty bankers-merchants of great wealth and reputation were admitted to the *conto* fixing, which was carried out by vote. Called one by one, all the participants stated what in their opinion was the level of exchange for the Piacenzan *écu* for a given market. The winning quotations were those that at least half the opinions expressed came close to (Peri 1638, 207–8).

In every local market, supply and demand for bills of exchange were, of course, fed by importers and exporters, respectively. However, market conditions also responded to the system’s liquidity. In fact, there was considerable activity by bankers-merchants engaged in exchange *per arte*, that is, fictitious exchange, using their funds to purchase bills of exchange, even though they had no need to make payments abroad. In the previous example, merchant B may purchase a bill of exchange not only if he has to pay an overseas supplier but also if he hopes to make a profit when correspondent B' refunds the credit with the most advantageous of the alternatives open to him: either a bill of exchange on Naples or shipping of silver or authorization to issue a bill of exchange in Naples on the account of B'.

An exchange operation *per arte* was considered concluded only when B regained possession of the sum advanced, possibly with an increase. Thus the rate of exchange implicitly included interest, as attested by the fact that the bills of exchange of greater maturity obtained lesser prices. Over and above this, however, the interest rate element was indistin-

guishable in the price of the bill of exchange. Plentiful or scant liquidity directly affected prices when the market was “tight,” that is, funds that might be used to purchase bills of exchange were scarce and the exchange rate fell. However, it would be forcing the point to suppose that this drop was due to any variation in the price component represented by the interest rate.¹⁴ The gains of someone purchasing a fictitious bill of exchange were based on the difference between the exchange rate agreed on and the exchange rate prevailing abroad at the time of the “return,” which was expected to be higher than the initial rate. Such expectations were usually satisfied, although the element of risk was always there (indeed, it was precisely the uncertainty of gains that saved persons putting capital into exchange from condemnation for usury).¹⁵ To account for these gains we must understand how legal parity was determined.

3. Legal Parity

In every country the public authorities fixed by decree the price in units of account at which gold and silver were purchased from the mint, the pure metal content of each type of coin, and the nominal value of each of them (i.e., the number of units of account each represented). They also fixed the official quotations of the major foreign coins, or in other words, the nominal value on the basis of which these coins were purchased from the mint or, in certain cases, entered into general circulation.

For foreign coins nominal value was fixed on a par with the official price of silver (or gold) multiplied by the corresponding content of pure metal, but on account of seigniorage the domestic coinage was overvalued: given equal pure metal contents, a domestic coin corresponded to a greater number of units of account, the difference being in fact the seigniorage.

Let us suppose that the domestic coins be of n types, the foreign coins of m types, and let us define the following: p = official price of silver in Naples in units of account; p^* = official price of silver abroad in foreign units of account; a_i = fine silver content of Neapolitan coins of type i ,

14. Debate on the presence of a component of the price of the bill of exchange that might be identified with payment of interest arose as soon as the bill itself came into existence. For centuries the church investigated the nature of exchange operations to ascertain whether they came within the condemned area of usury. See De Roover, 1953, 61–64.

15. An exchange operation *per arte* was therefore a straight loan, but with a return for the lender that was uncertain. It was also called “dry” exchange, since it did not “feed the current of foreign trade” (De Roover 1944, 264).

$i = 1, \dots, n$; a_j^* = fine silver content of foreign coins of type j , $j = 1, \dots, m$; s_i = seigniorage on Neapolitan coins of type i ; and s_j^* = seigniorage on foreign coins of type j . We thus have: $pa_i + s_i$ = official value of Neapolitan coins of type i in Naples in Neapolitan units of account;

p^*a_i = official value of Neapolitan coins of type i abroad in foreign units of account;

$p^*a_j^* + s_j^*$ = official value of foreign coins j abroad in foreign units of account; and

pa_j^* = official value of foreign coins j in Naples in Neapolitan units of account.

Legal parity is defined as the ratio between the silver (or gold) content of the foreign unit of account and that of the domestic unit of account. However, it should be borne in mind that as a result of seigniorage the quantity of silver (or gold) corresponding to the unit of account, $a_i / (p a_i + s_i)$, varied according to the actual coins considered. Only if $s_i = s_j^* = 0$, $i = 1, \dots, n$ and $j = 1, \dots, m$, would the quantities of silver corresponding to the units of account of the two countries be respectively $1/p^*$ and $1/p$, and the legal parity p/p^* . However, given seigniorage we would theoretically have had $n \times m$ legal parities. Thus we face two problems when defining legal parity: first, whether reference is to be made to coins or bullion for the quantity of metal corresponding to the unit of account; and second, whether, given coins with different metal content that nevertheless correspond to the same nominal value, reference is to be made to the lighter or heavier coins.

With regard to the first point, the convention was to base legal parity on the minted metal (although two centuries later legal parity was to be based on the official price of bullion). It was in fact tantamount to taking reference from the manual operation of exchange between currencies performed by the merchant, calculating how many of his country's coins he had to take with him to obtain a foreign unit of account when a broad. In particular, parity E in Naples is given by

$$E = \frac{pa_j^*}{p^*a_j^* + s_j^*} \quad (1)$$

and makes reference to the ratio between the official quotations in Naples and abroad of foreign coin j , while E^* , legal parity abroad with respect to Naples, is

$$E^* = \frac{pa_i + s_i}{p^*a_i} \quad (2)$$

and makes reference to the ratio between the official quotations in Naples and abroad of Neapolitan coin i . This principle of basing exchange on the foreign coin in Naples and on the Neapolitan coin abroad was sanctioned by convention but also had a rational explanation.

Let us suppose that a merchant who is in Naples has to procure currency abroad and resorts to sending metal coins. He has two alternatives. He can send Neapolitan currency, selling it abroad according to official quotations, or he can purchase the foreign currency in Naples and send it abroad. Net of transaction and transport costs, in the former case the cost of one unit of foreign currency would be for him

$$\frac{pa_i + s_i}{p^*a_i}; \text{ in the latter it would be } \frac{pa_j^*}{p^*a_j^* + s_j^*}.$$

Given that

$$\frac{pa_i + s_i}{p^*a_i} > \frac{pa_j^*}{p^*a_j^* + s_j^*},$$

the cost is lower if foreign coins are used. Thus the more advantageous foreign currency will stand as reference currency in Naples. The same process applies to determine legal parity abroad.

It is immediately clear that $E < E^*$. Bearing in mind that the exchange rate has been defined as Neapolitan unit of account per foreign unit of account, we observe that the Neapolitan currency is worth more, that is, has a lower exchange rate, in Naples than in any other market. This was a general rule. "If Naples exchanges with Rome at 128, Rome will immediately exchange with Naples at 130" (De Santis 1605a, 123). Thus anyone who purchased bills of exchange in Naples and then purchased bills of exchange on Naples abroad could rely on a minimum guaranteed gain, even at legal parity. This applied equally to anyone who purchased bills of exchange abroad for Naples and exchanged in Naples for the foreign country. As Buoninsegni wrote in his treatise on exchange, "Those who are deliverers almost always gain and rarely lose out, and those who take up money by exchange almost always lose out" (1573, 12). It is in fact precisely to this consistent difference between exchange rates and the opportunities of sure gains thus afforded

that, according to some authors (Boyer-Xambeu, Deleplace, and Gillard 1986, 222–29), we owe the rise of a class of bankers-merchants who specialized in the one “credit” operation permitted—purchase *per arte* of bills of exchange.

With regard to the second point—which type of national coin to take in order to calculate parity—it will be seen that in general the differences in $a_i / (pa_i + s_i)$ were not very significant. Only in certain cases, such as the issue of a new coin, could they take on appreciable values. For example, the silver content of a half *carlino*, fixed in 1583, was not half the silver content of a *carlino*, although the nominal value (and thus legal purchasing power) was half (De Rosa 1955, 33). Similarly, the one-and-a-half *carlino* coin minted in 1611 did not correspond to the original silver content of a *carlino* and a half. Obviously, in these cases the so-called Gresham’s law applies, and the heavier coins (i.e., those requiring a greater quantity of metal to represent a unit of account) found their way to clandestine foundries or abroad, disappearing from circulation. Such consequences were recognized and anticipated in international quotations, which rapidly adjusted, taking reference from the inferior coin. Exchange “is always assessed with the worst species of coin,” and “exchange is regulated according to the coin that attracts the price of the other coin towards it” (Biblia 1621, 255).

Thus defined, legal parity represents the cost to be borne in domestic units of account to obtain a foreign unit of account with the purchase and sale of coins at their official values. It therefore constitutes the reference price around which prices of bills of exchange revolved—the alternative to “manual” exchange. Once legal parity was determined, variations in the exchange rate as fixed on the market depended on conditions of supply and demand for bills of exchange and the difference between official quotations of precious metals and coins and their actual prices on the market.

Let us begin by supposing this difference did not exist. In this case, fluctuations in the market exchange rate about legal parity would remain within a margin delimited by what eventually were defined as “specie points,” that is, transport and transaction costs for precious metals. In fact, the market exchange rate would rarely have exceeded legal parity plus costs to transport the coins; in such a case it would have been more convenient to pay a debt abroad by sending the coins rather than obtaining a bill of exchange at a higher price in terms of domestic units of account. At the same time, easy gains would be open

to a merchant who could either (1) sell a bill of exchange and then, at maturity, cover his position by sending coins, or (2) send coins and have the earnings sent back with a bill of exchange. For these cases c = cost of shipping, insurance, sale of Neapolitan coins abroad as a percentage of their nominal value; c^* = cost of shipping, insurance, sale of foreign coins in Naples as a percentage of their nominal value; E_m = market exchange rate in Naples, that is, price of a foreign unit of account purchased with a bill of exchange; and E_m^* = market exchange rate abroad.

Note that the first case requires that

$$E_m > E(1 + c), \quad (3)$$

that is, more *carlini* could be obtained on the Neapolitan market selling a bill of exchange for abroad than were necessary to pay the debt at maturity by shipping coins; the second case requires that

$$E_m^* > E^*(1 + c), \quad (4)$$

that is, there were gains in sending *carlini* abroad in quantity E^* to be sold, and with the gains purchase a bill of exchange entitling the holder to $E_m^* > E^*$ *carlini*. Consequently, when (3) and/or (4) held, silver coins would flow out of the Kingdom of Naples.

Similarly, at the other end of the margin of variation the market exchange rate could not fall below the level of legal parity diminished by transport costs, that is, there would be an inflow of coins if

$$E_m < E(1 - c^*) \quad (5)$$

or

$$E_m^* < E^*(1 - c^*). \quad (6)$$

The more difficult and risky the entire operation, the higher c and c^* rose (and thus the greater became the margin of fluctuation). Laws banning the melting down and export of coins introduced an element of risk that further raised transaction and transport costs, which were already high.¹⁶

16. For an analysis of transaction costs in the precious metals trade, see Marcuzzo and Rosselli 1987.

4. The Explanations Advanced by De Santis and Serra for the Disappearance of Gold and Silver Coins

From the previous sections two conclusions can be drawn that help illustrate the debate. First, because the number of merchants active in the foreign exchange market was relatively small, they could give the impression that they were able to vary the exchange rate at their pleasure. Second, under the assumption that official and market prices of gold and silver coincide, the relation between the market rate of exchange and the legal parity could be such that inflows and outflows of precious metals became profitable, as shown by inequalities (3)–(6).

De Santis's entire argument rests on simple considerations regarding the most advantageous way to make an international payment, by approaching the matter microeconomically, from a merchant's viewpoint. Unlike the far wrier Serra, De Santis cherished the literary topos of Italy's fertile south¹⁷ and was convinced that the Kingdom of Naples could boast a trade surplus of about 5 million *écu*. Thus he ascribed the disappearance of coins from circulation to an excessively high market rate of exchange, that is, to the depreciation of the Neapolitan currency beyond the specie points, determined by a conspiracy of merchants. As a result of the high exchange rate, imports were paid in coin while Neapolitan exports continued to be paid with bills of exchange: "In all his *Discourse* Mark Antony de Santis undertakes to prove no more than that the high rate of exchange in Naples on the other cities of Italy is the sole cause of the scarcity of money in the Kingdom. This he bases on the argument that the high rate of exchange does not permit remittance to be made in cash for the commodities exported from the Kingdom, rather than by exchange; while remittance for commodities imported is made in cash instead of exchange, because of the profit to be made in each case" (Serra [1613] 1913, 178; 1924, 154). Thus there would appear to have been an outflow, further aggravated by the "profit to be made . . . by the export of cash for the purpose of drawing it back afterwards by exchange" (Serra [1613] 1913, 182; 1924, 159), as we saw in the second case. This was the reason why the kingdom was left "moneyless" (De Santis 1605b, 161).

De Santis's reasoning displays three serious flaws. First, he ignores

17. On the force of this myth, which obfuscated the signs of crisis, see Calabria 1991, 9–11.

any relationship between balance of trade (or, rather, of payments) and exchange rate, causing him to believe that a surplus of the proportions conjectured was compatible with permanent depreciation of the domestic currency. Second, he assumes that the prices of both gold and silver corresponded to the official values, thus reasoning as if the foreign currencies were exchanged with the domestic currency on the market according to the official quotation. The official quotation applied to foreign currencies acquired by the mint, but, as we shall see, it was possible to find private purchasers prepared to pay more, though this was illegal. And third, he doesn't consider any possibility of adjustment: coin leaves the kingdom, the exchange remains high, and nothing happens to correct the trend despite the diminishing supply of coin. Indeed, De Santis seems to ascribe an odd sort of asymmetry to exchange market behavior. Although he confidently ascribes the rise in exchange to plentiful liquidity on the Naples market after the extraordinary arrival of a million and a half ducats (De Santis 1605b, 160), the lack of liquidity following inevitably the disappearance of coin was supposed to have no effect on the exchange rate.

Thus, while from the macroeconomic point of view De Santis seems to have no idea of relations between balance of payments trends and exchange rate, in terms of microeconomics and conditions governing the export of coin his reasoning is perfectly sound. "A real expert in business," as Serra defines him ([1613] 1913, 148), De Santis was clearly aware of the opportunities for gain open to merchants and of their capacity to seize them.

Serra is quick to point out the absurdity of seeing a foreign surplus as compatible with the outflow of money, but his own reasoning is not logically rigorous either. He rightly insists that the outflow derives from the balance of payments deficit, since the foreigners' interests and profits more than offset receipts on exports: "The real reason why money does not come in return for the export of goods being the incomes drawn by foreigners from the Kingdom, and the industry they carry on there" (Serra [1613] 1913, 214; 1924, 166).¹⁸ He also rightly finds unacceptable De Santis's thesis that the excessively high level of exchange prevented a trade surplus from resulting in the inflow of metal currency. However, Serra ends up by denying any influence of the exchange rate on decisions regarding the payment of exports: "The level of exchange

18. See also Serra [1613] 1913, 200, 205.

cannot be a means to prevent coin from coming into the kingdom for exports” (Serra [1613] 1913, 185).

Both men fail to see the missing links in the causal chain running from the balance of payments deficit to excess demand for foreign currency on the exchange market, and thence to exchange depreciation and the consequent incentive created to export money. De Santis dwells only on the last part of the chain, ignoring the macroeconomic aspects. Serra, who shows far greater sensitivity to general economic conditions, overlooks the intermediation of exchange markets necessary for a foreign deficit to produce the outflow of gold and silver coins. Serra focuses on the final result, as if the Kingdom of Naples were one operator paying for what he needs, and misses the fact that behind every macroeconomic result there are markets and merchants acting according to individual interests.

Neither Serra nor De Santis refers to possible self-correcting mechanisms coming into operation as the supply of coin diminishes.¹⁹ For De Santis, the exchange rate exerts an influence on the balance of payments, while the balance of payments appears to have no effect on the exchange rate. For Serra, no reciprocal relation exists between balance of payments and exchange rate.

5. Intrinsic Value and Real Parity

Serra not only contests De Santis’s thesis on the effects of the high exchange rate but even denies that the rate is high. To do so he refers not to the legal but to the real parity, dropping the unrealistic assumption that gold and silver coins were sold in Naples at their official prices.

The existence of seigniorage meant a loss for those taking precious metals to the mint to obtain coins: in fact, the coins returned to them

19. By “self-correcting mechanisms” I do not refer to the price-specie-flow-type mechanisms, which are pointless to look for in the authors of that time, but to the direct effects that liquidity conditions have on the rate of exchange. See the rather more penetrating analysis by an anonymous Genoese cited by De Santis (1605b) pinpointing the following chain of events: first, a balance of payments deficit aggravated by the repatriation of profits from foreign investments because of the lack of opportunity for advantageous use in the kingdom; then, depreciation of the market exchange rate beyond the specie points and outflow of all the heavier coins; and the result, no improvement in the market exchange rate, which remains at a depressed level despite the outflow of money, metal currency having been replaced by the paper currency of “certificates of credit.”

weighed less than the quantity of silver or gold initially consigned.²⁰ The conflict between sovereign, who gained from seigniorage, and market, which was obliged to ascribe different values to coins having equal metal content, is attested by the numerous interdictions issued over the centuries to prohibit the melting down of coins, the purchase and sale of coins at prices other than the nominal value, the hoarding of newly minted coins while putting only the most worn pieces back into circulation, and forgery, which became more widespread when the precious metal content of coins diminished. From the early sixteenth century throughout Europe the penalty for many of these offenses was death (and Serra himself may have ended up in prison for breaking a law of this type).

The overvaluation of the domestic coin against foreign currency imposed by the sovereign led to metal prices and market rates differing from the official figures. Let us suppose that a is the metal content (intrinsic value) of the Neapolitan *carlino*. The official price of the metal, p , represents a minimum for the market price, p_m , since nobody would be prepared to sell at a price lower than that obtainable at the mint. Indeed, when $p_m = p$, all the metal not utilized for production purposes found its way to the mint. The maximum price is given by $1/a$, the number of coins necessary to obtain, if melted down, a unit of weight of the metal, multiplied by the respective nominal value (possibly increased by risk factor R in view of the penalties for melting down coins). Thus

$$p \leq p_m \leq \frac{pa + s}{a} + R.$$

The price of metal fluctuated within this margin, which would widen with every decrease in a . Thus the quotations for foreign coins also diverged from the official rates.

Whenever a decreased, either because of an increase in seigniorage or because the coins left in circulation were clipped and worn, the effect made itself felt on the exchange rate with variation in the reference parity. Bearing in mind that the legal parity abroad, E^* , is

20. Seigniorage generally occurred in this form. Otherwise, the mint might charge separately without subtracting part of the metal. In this case seigniorage was merely a further transaction cost that widened the margin of market exchange fluctuation about legal parity.

$$E^* = \frac{pa + s}{p^*a},$$

it is immediately apparent that E^* increased with a fall in the value of a . At the same time the reference parity in Naples, based on the foreign coin with a^* metal content, also rose with the increase in the market price of the metal to become E_r , the real parity:

$$E_r = \frac{p_m a^*}{p^* a^* + s^*}.$$

The legal parity lost out in significance in favor of the real parity because, when assessing the cost of a foreign unit of account in domestic currency, the merchants would consider not the official price of the coins (a price at which they could not be found on the market) but the much higher actual price.

Real parity diverged from legal parity (or the market price of the metal diverged from the official price) above all when a country passed from official bimetallism to de facto monometallism. The metal no longer representing the standard ceased to circulate in coin form and became a commodity like any other. Such was the case in Naples, where the gold *scudo* “never . . . circulated as a coin, but as a commodity, and thus appreciated” (Serra [1613] 1913, 190–91). To understand the exchange rate in Naples, which had silver as the standard, in relation to other places where the standard was gold (Venice, Florence, the fairs of Piacenza), it was important not to compare the market rate with legal parity, as De Santis did, but with the real parity. By comparing the price of bills of exchange with the latter, which gave the actual cost of procuring foreign currency with the shipping of coins, a merchant could weigh alternative forms of payment (precious metal or bill of exchange). By so doing, a market exchange rate that appeared excessively unfavorable when compared with the legal parity might in fact be quite favorable. Indeed, the intention behind Serra’s calculations was to demonstrate that the situation was of this type:

$$E_r(1 - c) > E_m > E(1 + c).$$

The market exchange thus exceeded legal parity, as De Santis maintained, but when compared with real parity it became an incentive not to export but rather to import coin. And this was the argument that Serra used to support his thesis that no relationship existed between exchange

rate and money flows ([1613] 1913, 190–91). In itself the argument is wrong, and Serra must have made a mistake in his calculations, since if it had been so profitable, silver would have flowed into the kingdom. However, it shows how strong was Serra's belief that the rate of exchange had no influence on the precious metals trade.

6. Exchange Rate Intervention

Different analyses suggested different remedies to deal with the scarcity of coin. Apart from a ban on the export of precious metals, to which Serra was firmly opposed—"freedom of export is a cause of greater commerce and its prohibition of less" ([1613] 1913, 211; 1924, 162)—the main solutions, either proposed or actually adopted, implied manipulating the exchange rate. However, there was no agreement on whether to devalue or revalue.

Advocates of devaluation proposed acting on legal parity with two alternative measures. The first was an increase in the valuation of foreign currencies, adding to the official value of their metal contents a premium, P , so that the exchange rate became

$$E' = \frac{pa^* + P}{p^*a^* + s^*} > \frac{pa^*}{p^*a^* + s^*}.$$

The idea was to attract foreign currency by offering a favorable exchange. The other measure was a decrease in the silver content of the unit of account, reducing it to $a' < a$, with a consequent increase in seigniorage, so that the new legal parity would become

$$E^{*'} = \frac{pa' + s'}{p^*a'} > \frac{pa + s}{p^*a}.$$

Serra opposes these measures by combining considerations on their desirability in terms of broad policy and social justice with arguments on their economic efficacy. He considers it humiliating for a sovereign to forego his rights of seigniorage and allow the coin of other princes to circulate in his own kingdom, exposing his subjects to the risk of being defrauded: "It may cause harm to his subjects generally, by making it possible for a foreign prince to cheat them, by malice or without; as, for example, when a prince, whose money circulates in another country, lowers the fineness of his money, with malice or without" ([1613] 1913, 215; 1924, 167). He also considers it unjust for creditor subjects to be

paid in *carlini* with a silver content inferior to that of the *carlini* loaned to their debtors. Above all, he sees such maneuvers as not only useless but harmful.

In fact, as far as the first proposal is concerned, an increase in the valuation of foreign currencies created opportunities of gain for people taking Neapolitan money abroad and exchanging it for foreign currencies, which they could then sell in Naples on more advantageous terms. Given that the exchange is more favorable to Neapolitan coins abroad than to those within the kingdom, there was an incentive to export them, which is precisely what they wanted to avoid.

On the contrary, reducing the metal content discouraged the export of money whose purchasing power diminished abroad, but at the cost of raising internal prices. Since the measure aimed at conserving rather than increasing the money stock, it would be valid only in a country rich in precious metals.

As we have seen, Serra does not consider the possibility of devaluation favoring Neapolitan exports, nor does he support inflationary measures. On these grounds he rules out any exchange rate maneuver and advocates improving the general economic conditions of the kingdom, since the balance of trade would then take care of itself.

In contrast, De Santis was well aware of exchange effects on imports and exports, and he proposed revaluation with the conviction that its effects on exports would not be felt thanks to the superiority of the Neapolitan products, for which demand was relatively inelastic. However, De Santis did not wish to intervene on the legal parity, but on the market exchange rate. A law was to be promulgated forbidding all merchants in the kingdom to exchange at a rate above a given level. The market exchange rate, controlled by a limited number of merchants and manipulated by them, seemed to De Santis like a "mere artifice" that could be handled equally well or even better by the sovereign, and to the greater advantage of the community as a whole. De Santis was convinced that in the end it was just a matter of how serious the penalties were: if they were severe enough the interests of the few could be subjugated to the collective good. His suggestion was taken up in a *Prammatica* of 1607 ruling that transactions should be concluded at a preestablished, revalued exchange rate. Obviously, this measure failed, and Serra, on the strength of the experience, dedicated several pages to its impracticality as well as its inefficacy.

The difference in views on what can be imposed on the market was

accompanied by opposing views of the role played by southern Italy in international trade. De Santis and others still harboring illusions about the real state of the Kingdom of Naples believed that “the whole World needs the Kingdom, and the Kingdom needs no one” (De Santis 1605a, 131), whereas Serra had a clear vision of the decline of his country and its dependence on foreign countries: “the Kingdom needs the cities of Italy to take its merchandise far more than it needs theirs” ([1613] 1913, 198).

Conclusions

Unlike De Santis, Serra rose above the viewpoints of merchants and the masters of the mint, turning his attention to the real economy and the factors—economic and otherwise—that determine a country’s development. Indeed, he appears to have been unfamiliar with the intricacies of the foreign exchange market.

The world of international traffic in currency was by no means a simple subject—money was “a mystery that few can understand,” as Sieur de Malestroict wrote in 1566. There were legal rates and commercial rates, nondefined standards, identical terms for different things and different terms for identical things. I have sought to highlight a few of the problems associated with currency flows in order to better comprehend the institutional foundations of the debate on money matters that took place in early-seventeenth-century Europe. However, I have also pursued a more implicit aim, and that is to shake off what E. P. Thompson defined as “the enormous condescension of posterity.”

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